

REMARKS

This Amendment is responsive to the Office Action identified above, and is further responsive in any other manner indicated below.

NON-ENTRY OF INFORMATION DISCLOSURE STATEMENT - TRAVERSED

Applicant's previously-submitted information disclosure statement has been refused consideration, apparently on a basis that Applicant utilized a listing/format other than a Form PTO-1449 to list references. **Strong traversal is appropriate as there is no basis for denying entry.** More particularly, MPEP §609 states, "Applicants are **encouraged** to use the USPTO forms when preparing an information disclosure statement." The term "**encouraged**" does not mean "mandatory", and there is **no authorization within the MPEP or elsewhere for denying entry or consideration** when a different (*i.e.*, non-1449) type of listing/format is used. **In the interest of cooperating with the Examiner, submitted herewith is a Form PTO-1449 listing the references,** and Applicant respectfully requests return of an Examiner-initialed copy indicating that the information (*i.e.*, references) has been considered. Applicant respectfully thanks the Examiner in advance for such initialing/consideration.

PENDING CLAIMS

Claims 1-18 were pending in the application, under consideration and subject to examination at the time of the Office Action. **Unrelated to any prior art, scope or rejection,** appropriate claims have been amended, added or deleted (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed

invention. That is, the amendments to the claims are unrelated to any prior art or scope adjustment, and are simply clarified claims in which Applicant is presently interested. At entry of this paper, Claims 1-18 remain pending in the application for consideration and examination.

REJECTIONS UNDER 35 USC §102

The 35 USC §102 rejection of Claims 1-18 as being anticipated by Zak (US 5,631,814 A), and the §102 rejection of 1-18 as being anticipated by Tokunaga *et al.* (US 6,507,507 B2), are respectfully traversed.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated herein by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following. The cited art does not adequately support a §102 anticipation-type rejection because it does not, at minimum, disclose (or suggest) the following limitations of Applicant's clarified claims.

As one important feature, Applicant's disclosed and claimed invention has two (2) boosting arrangements which operate in series whenever Applicant's uninterruptible power supply is operating using DC power from an energy accumulation means during occurrence of an AC failure. More specifically, referencing Applicant's FIG. 1, upon an AC failure, Applicant's rechargeable battery 9 supplies DC power which is boosted a first time by Applicant's charge/discharge circuit 8, and which is then boosted a second time by Applicant's power factor

correction (PFC) converter 6, before arriving at Applicant's converter 7. That is, note that both such boosting components are in the series circuit running from the battery 9 to the converter 7.

In terms of relevant claim language, Applicant's independent Claim 1 (and claims dependent therefrom) explicitly recites, "wherein the DC power from said energy accumulation means is passed through two serially connected boost means, and thereafter the power is converted into the desired power to be supplied to the load." Applicant's independent Claim 8 (and claims dependent therefrom) recites such feature in a differing way, *i.e.*, recites, "boost means [8] for feeding a DC power in said energy accumulation means towards said output converter upon occurrence of an AC power failure, wherein said boost means boosts the DC power in said energy accumulation means and feeding the boost power to an input side of said boost converter [6]." Independent Claim 12 (and claims dependent therefrom) contain similar and/or analogous features/limitations.

Turning first to rebuttal of Zak, such reference does not disclose (or suggest) any type of arrangement having two (2) booster arrangements operating in series to boost DC power from an energy accumulation means during AC failure. More particularly, Zak's boost charger 27 does not act as a booster arrangement during AC failure (as alleged in the Office Action), i.e., Zak's boost charger 27 only operates during normal AC operation to allow charge to flow therethrough to charge the batteries 25, 26. Further, it is respectfully noted that Applicant's PFC circuit also does not act as a booster arrangement during AC failure (as alleged in the Office Action), as Applicant's PFC circuit (see Zak's FIG. 1) is basically inoperative during AC power line failure, as Zak's PFC circuit is not within the series connection

supplying power from Zak's batteries 25, 26 to Zak's DC-DC converter 21 during AC power line failure. Accordingly, both Zak items (PFC and 27) alleged in the Office Action as two serially connected boost means during AC failure are mischaracterized.

Turning next to rebuttal of Tokunaga *et al.*, the PFC circuit of Tokunaga *et al.* (like that of Zak) does not lie within the series circuit supplying power from Tokunaga *et al.*'s battery through the DC converter and to Zak's DC-DC converter too, *i.e.*, Tokunaga *et al.*'s PFC circuit is basically inoperative during any AC power line failure. Accordingly, the Office Action allegation of the Items 12-14 as items serially connected boost means is incorrect.

In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

(1) Zak (US 5,631,814 A)

As to page 3, line 1 of the Office Action, the Examiner indicates on Zak "...the power from said energy accumulation means is passed through two serially connected boost means (PFC (21) and 27)...." In the disclosure of Zak, during the charging operation (*i.e.*, not the failure), the batteries 25 and 26 are connected through the two boost means, namely the PFC and the boost charger 27. However, in Zak, during AC failure (*i.e.*, not the supply operation) of the batteries 25 and 26, the power from the batteries does not pass through the boost charger 27 and the PFC. Here, in the DC-AC converter, the input side voltage is the voltage rectified from the commercial AC power, and the output side voltage is 5V, 12V and so on, as disclosed in Zak. So, in Zak, the output voltage is smaller than the input voltage.

Accordingly, the DC-AC converter of Zak does not correspond to the "boost means" of the second stage recited in the claims of the present invention.

In addition, in the Office Action, the Examiner indicates there exists a 2-way ON-OFF switch 14. In the present invention, the switch is disposed between the battery and the second boost means to prevent the battery from discharging during the normal time. In the present invention, when AC is normal, the switch is OFF. On the other hand, in Zak, the switch is disposed at the AC input side to cut off the reception of the AC power. In Zak, when AC is normal, the switch is ON. Accordingly, the constitution and the operation of the present invention are remarkably different from those of Zak.

Further, in the claims of the present invention, the difference in the operation of the switch is defined by the recitation of "upon occurrence of an AC failure," *i.e.*, the DC power is passed through two serially connected boost means upon occurrence of an AC failure.

Accordingly, it is clear that the present invention is different from Zak.

(2) Tokunaga *et al.* (US 6,507,507 B2)

The Examiner indicates in Tokunaga *et al.*, upon occurrence of an AC failure, power is supplied to a load 5 from the accumulation means 4 through boost means comprising a DC converter 31, a reactor 12, a switching element 13 and a diode 14. However, the circuit comprising the reactor 12, the switching element 13 and the diode 14 is called the Power Factor Correction (PFC) circuit. The PFC circuit is disposed at the AC side of the output of the DC converter, so when the power is supplied from the battery 4 to the load 5, the current does not pass through the PFC

circuit. Therefore, Tokunaga *et al.* does not disclose the constitution of the claims of the present invention.

The subject and the purpose of the present invention is to utilize effectively the PFC circuit disposed at the AC input side for improving the increase of the boost ratio of the DC converter. Namely, the uninterruptible power supply (UPS) which can reduce the voltage of the energy accumulation means can be provided by utilizing the PFC circuit effectively, as described as the effect of the present invention in the present specification.

Accordingly, as compared with the multi-outputs converter with the backup function of the prior art, in the present invention, the number of the cells of the battery connected in series can be reduced to decrease the volume of the uninterruptible power system and realize low cost. In the present invention, the reliability to the failure of the battery cell can be improved by reducing the number of the cells connected in series.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support a §102 anticipation-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such §102 rejections, and express written allowance of all of the rejected claims, are respectfully requested. Further, at this point, it is respectfully submitted as a reminder that, if new art is now cited against any of Applicant's unamended claims, then it would not be proper to make a next Action final.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer of any scope or subject matter. Further, Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, *i.e.*, Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

EXAMINER INVITED TO TELEPHONE

The Examiner is invited to telephone the undersigned at the local D.C. area number 703-312-6600, to discuss an Examiner's Amendment or other suggested action for accelerating prosecution and moving the present application to allowance.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

A Petition for Extension of Time is filed concurrently herewith. To whatever other extent is actually necessary, Applicant respectfully petitions the Commissioner for an extension of time under 37 CFR §1.136. A Form PTO-2038 authorizing


KANOUDA *et al.*, SN 10/623,681
Amendment filed 05/19/2005
Resp. to OA mailed 12/23/2004

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payment of all fees for entry of this paper also is being filed concurrently herewith.

Please charge any actual fee deficiency to ATS&K Deposit Account No. 01-2135 (as
Case No. 500.42875X00).

Respectfully submitted,



Paul J. Skwierawski
Registration No. 32,173
ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 North Seventeenth Street, Suite 1800
Arlington, Virginia 22209-3873, USA
Telephone 703-312-6600
Facsimile 703-312-6666

Attachments:

PTO-1449 Equivalent
Petition for Extension of Time
PTO-2038 (Fee Code 1252)

Form PTO-1449
EquivalentU.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE

ATTY. DKT. NO.

500.42875X00

SERIAL NO.

10/623,681

INFORMATION DISCLOSURE STATEMENT
BY APPLICANT

(Use several sheets if necessary)

APPLICANT

Akihiko KANOUDA *et al.*

FILING DATE

22 July 2003

GROUP

2838

U.S. PATENT DOCUMENTS

Ex. Initial	Doc. No.	Date	Name	Class	Subclass	Filing Date
	AA					
	AB					
	AC					
	AD					
	AE					
	AF					
	AG					
	AH					
	AI					
	AJ					
	AK					

U.S. PATENT APPLICATIONS

	Publication Number	Name	Publication Date
	AL		
	AM		
	AN		
	AO		
	AP		

FOREIGN PATENT DOCUMENTS

	Doc. No.	Date	Country	Class	Subclass	Translation/Abstract?	
						Yes	No
	AQ	2002-171692	06/14/2002	JP		Abstract	
	AR	2000-116029	04/21/2000	JP		Abstract	
	AS						
	AT						
	AU						

OTHER DOCUMENTS

	AV	US Application No. 10/412,231 filed 14 April 2003 (US Equiv. of JP 2002-113116)
	AW	US Application No. 10/412,319 filed 14 April 2003 (US Equiv. of JP 2002-113117)
	AX	US Application No. 09/931,250 filed 17 August 2001
	AY	US Application No. 10/083,638 filed 27 February 2002

Examiner

Date Considered